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Quality Engineering Test Report

SERIES: DR-120 120W AC-DC SINGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A. DR-120-12 12V/10A B. DR-120-24 24V/5A C. DR-120-48 48V/2.5A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION		RESULT	VERDICT						
1	MAX. INRUSH CURREN	I/P:230VAC O/P: FULL LOAD	SPEC:60A	A: 30.617A B: 37.656A C: 27.812A	P						
2	SET UP TIME	I/P:230VAC O/P:FULL LOAD	SPEC:500mS	A: 268.86mS B: 309.21mS C: 301.30mS	P						
3	RISE TIME	I/P:230VAC O/P:FULL LOAD	SPEC:70mS	A: 18.82 mS B: 45.88 mS C: 32.29 mS	P						
4	HOLD UP TIME	I/P:230VAC O/P:FULL LOAD	SPEC:30mS	A: 39.19mS B: 43.18mS C: 44.21mS	P						
5	LINE REGULATION	I/P:176-264VAC O/P:FULL LOAD	SPEC: A: ± 0.5 % B: ± 0.5 % C: ± 0.5 %	A. +0.00 % ~ +0.05 % B. -0.00 % ~ +0.024 % C. -0.012 % ~ +0.037 %	P						
6	LOAD REGULATION	I/P:230VAC O/P:MIN. TO FULL LOAD	SPEC: A: ± 1 % B: ± 1 % C: ± 1 %	A. -0.35 % ~ +0.35 % B. -0.024 % ~ +0.024 % C. -0.04 % ~ +0.08 %	P						
7	OUTPUT VOLTAGE TOLERANCE	I/P:176-264VAC O/P:0% TO FULL LOAD	SPEC: A: ± 2 % B: ± 1 % C: ± 1 %	A. -0.73 % ~ +0.049 % B. -0.078 % ~ +0.000 % C. -0.077 % ~ +0.039 %	P						
8	OVER LOAD PROTECTION	I/P:230VAC O/P:TESTING	SPEC: A: 105 % ~ 150 % B: 105 % ~ 150 % C: 105 % ~ 150 %	A: 129% B: 120% C: 135%	P						
9	AC INPUT VOLTAGE RANGE	I/P:TESTING O/P:FULL LOAD	SPEC:176~264VAC	A. 125.0V ~ 264 VAC B. 129.087V ~ 264 VAC C. 125.062V ~ 264 VAC	P						
10	RIPPLE&NOISE	I/P:230VAC O/P:FULL LOAD	SPEC: A: 80 mVp-p B: 80 mVp-p C: 100 mVp-p	A: 24 mVp-p B: 16 mVp-p C: 37 mVp-p	P						
11	AC INPUT CURRENT	I/P:230VAC O/P:FULL LOAD	SPEC:1.7A	A: 1.229 A B: 1.208 A C: 1.149 A	P						
12	EFFICIENCY	I/P:230VAC O/P:FULL LOAD	SPEC: A: 80 % B: 84 % C: 85 %	A: 81.938% B: 85.422% C: 85.977%	P						
13	OVER VOLTAGE PROTECTION	I/P:230VAC O/P:MIN LOAD	SPEC: A: 15~16.5V B: 29~33V C: 58~65V	A: 16.2V B: 31.2V C: 59.9V	P						
14	O/P VOLTAGE ADJ.RANGE	I/P:230VAC O/P:MIN. LOAD	SPEC: A: 12 V ~ 14 V B: 24 V ~ 28 V C: 48 V ~ 53 V	A. 10.65 V ~ 15.084 V B. 21.339 V ~ 29.781 V C. 39.76 V ~ 55.88 V	P						
15	GROUND LEAKAGE CURRENT	I/P:240VAC	SPEC: L-FG-<3.5mA N-FG-<3.5mA	<table><tr><td>A:</td><td>L-FG: 1.74mA N-FG: 1.75mA</td></tr><tr><td>B:</td><td>L-FG: 1.74mA N-FG: 1.75mA</td></tr><tr><td>C:</td><td>L-FG: 1.74mA N-FG: 1.75mA</td></tr></table>	A:	L-FG: 1.74mA N-FG: 1.75mA	B:	L-FG: 1.74mA N-FG: 1.75mA	C:	L-FG: 1.74mA N-FG: 1.75mA	P
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16	DIELECTRIC / WITHSTAND VOLTAGE	SPEC: I/P- O/P: 3KVAC/ 1 min. I/P - FG: 1.5KVAC/ 1 min. O/P -FG: 0.5KVAC/ 1 min.	<table><tr><td>A:</td><td>I/P-O/P: 8mA I/P-FG: 5.9mA O/P-FG: 14.8mA</td></tr><tr><td>B:</td><td>I/P-O/P: 6.2mA I/P-FG: 4.8mA O/P-FG: 7.2mA</td></tr><tr><td>C:</td><td>I/P-O/P: 9.45mA I/P-FG: 7.79mA O/P-FG: 15.5mA</td></tr></table>	A:	I/P-O/P: 8mA I/P-FG: 5.9mA O/P-FG: 14.8mA	B:	I/P-O/P: 6.2mA I/P-FG: 4.8mA O/P-FG: 7.2mA	C:	I/P-O/P: 9.45mA I/P-FG: 7.79mA O/P-FG: 15.5mA	P																																										
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17	INSULATION RESISTANCE	SPEC: I/P-O/P: 500VDC/100MOhms MIN. I/P-FG: 500VDC/100MOhms MIN. O/P-FG: 500VDC/100MOhms MIN.	<table><tr><td>A:</td><td>TEST OK</td></tr><tr><td>B:</td><td>TEST OK</td></tr><tr><td>C:</td><td>TEST OK</td></tr></table>	A:	TEST OK	B:	TEST OK	C:	TEST OK	P																																										
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18	BURN-IN TEST	I/P: 230VAC O/P: FULL LOAD TA:25.7°C BURN-IN DURATION : 2.5 hrs	B:NON BREAK	P																																																
19	ENVIRONMENT TEST	1.LOW TEMPERATURE TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:-13.8°C	AFTER 14.5 hrs POWER ON OK	P																																																
		2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST I/P:230VAC O/P:FULL LOAD AMBIENT TEMPERATURE:52.2C	AFTER 6.5 hrs NON BREAK																																																	
		3.High Humidity High Voltage On/Off Test I/P:267VAC O/P:FULL LOAD AMBIENT TEMPERATURE:26.7°C AMBIENT HUMIDITY:95%	AFTER 14 hrs POWER ON NON BREAK																																																	
20	TEMPERATURE RISE TEST Trise OF PARTS	<table><tr><td colspan="2">B: I/P :230VAC</td><td colspan="2">AFTER1.5 hr BURN-IN</td></tr><tr><td colspan="2">O/P :FULL LOAD</td><td colspan="2">TA:26.1°C</td></tr><tr><td></td><td>POSITION</td><td>P/N</td><td>TEMP</td><td>Trise</td></tr><tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>66.8°C</td><td>40.7°C</td></tr><tr><td></td><td>Q1</td><td>MAIN TRANSISTOR</td><td>76.6°C</td><td>50.5°C</td></tr><tr><td></td><td>T1</td><td>MAIN TRANSFORMER WIRE</td><td>80.7°C</td><td>54.6°C</td></tr><tr><td></td><td>D51</td><td>O/P DIODE</td><td>74.1°C</td><td>48.0°C</td></tr><tr><td></td><td>C52</td><td>O/P FILTER CAPACITOR</td><td>67.8°C</td><td>41.7°C</td></tr><tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>51.2°C</td><td>25.1°C</td></tr><tr><td></td><td>LF2</td><td>I/P FILTER TRANSFORMER</td><td>63.4°C</td><td>37.3°C</td></tr></table>			B: I/P :230VAC		AFTER1.5 hr BURN-IN		O/P :FULL LOAD		TA:26.1°C			POSITION	P/N	TEMP	Trise		BD1	BRIDGE DIODE	66.8°C	40.7°C		Q1	MAIN TRANSISTOR	76.6°C	50.5°C		T1	MAIN TRANSFORMER WIRE	80.7°C	54.6°C		D51	O/P DIODE	74.1°C	48.0°C		C52	O/P FILTER CAPACITOR	67.8°C	41.7°C		C5	I/P FILTER CAPACITOR	51.2°C	25.1°C		LF2	I/P FILTER TRANSFORMER	63.4°C	37.3°C
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21	CRITICAL COMPONENT RECORD (FOR QC INSPECTION REFERENCE ONLY)	B: FUSE :4A/250V BRIDGE DIODE :D3SB60 LINE FILTER :TF-411 TRANSFOMER TF-798 POWER SWITCHER :2SK2850 OUTPUT DIODE :ESAD92-02 20A/200V OUTPUT CAPACITOR : N.C.C KY1500uF/35V 105°C INPUT CAPACITOR :RUBYCON 330uF/200V 85°C P.C.B :DR-120A-R1 FR-4 20Z DS																																																		
22	LIFE CYCLE	B: SUPPOSE C52 IS THE MOST CRITICAL COMPONENT I/P:230VAC O/P:FULL LOAD Ta:25°C Tc52:66.7°C Life: 97264.8hrs I/P:230VAC O/P:FULL LOAD Ta:45°C Tc52:89.8°C Life: 19630.8hrs		P																																																
DATE	SAMPLE	TEST RESULT	TEST	APPROVAL																																																
20011012	RD SAMPLE 12V,24V,48V	PASS	VINCENT	MAX LIN																																																
20020423	A111B01 12V,24V,48V	PASS	VINCENT	MAX LIN																																																
20020605	A205B02 12V,24V	PASS	VINCENT	MAX LIN																																																
20021206	A2011b01 24V	PASS	VINCENT	MAX LIN																																																

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